

# *Dryland Legumes Workshop*

*Farmer experiences with increasing  
Legume*

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# Breach Oak

- 400 ha sheep and beef farm, approx 100 ha cultivable, of which 40 ha is in lucerne
- Farm photo – general
- Soils: Loess silt loams  
(Can be very wet and then very dry due to imperfect drainage)
- Future plans: 10-20 ha Lucerne...leaves 300+ ha for another legume to dominate.

*Can 4-5 SU/ha be increased to 6-8 SU/ha on this land?*

# Duck Gulley Trial - sowing

- Summer spray fallow → 2<sup>nd</sup> spray Mid-March  
→ Aerial seeded Late March 2011.
- Seed mix – Sunny West face

Species	Sowing rate (kg/ha)
Prima Gland Clover (early flowering)	3
Bolta Balansa Clover (mid season flowering)	3
Campeda Sub Clover	6
Cocksfoot	1
Phalaris	1
Tonic Plantain	2

# Warwick's Comments

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## ○ **PRESOWING –**

Following a summer spray fallow, (spring spray wasn't a uniform application in terms of date, and was mixed in terms of success), a second spray mid March and aerial seeded in late March 2011.

## ○ **SEEDMIX –**

On the sunny West facing slope the seed mix (per ha) was the early flowering (3 kg) Prima Gland clover; mid season flowering (3 kg) Bolta Balansa Clover, and (6 kg) Campeda Sub Clover, with 1 kg each Cocksfoot and Phalaris and 2 kg Tonic Plantain. + 140 kg/ha fine lime pellets at sowing



# Duck Gulley trial - Fertiliser

Fertiliser	Application Rate	Application
Fine Lime Pellets	140 kg/ha	Sowing
30% Sulphur Super	200kg/ha	Top Dress (July 2011)
Ag Lime	1 T/ha	Top Dress (July 2011)

- Both controlled and improved areas received the above fertiliser.
- Soil tests (Oct 2010) were low  
Olsen P = 9,  
SO<sub>4</sub> = 5,  
pH = 5.6

# Duck Gulley - Management

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- Weighed ewes in @ set stocking (15<sup>th</sup> Aug 2011).
- Ewes and lambs reweighed & CS when removed (18<sup>th</sup> Oct 2011).
- Stock removed to allow annual legumes to flower, set seed in 1<sup>st</sup> year.

# Warwick's Comments

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- Weighed ewes in at set stocking (15 Aug 2011) pre-lamb; ewes losing both lambs were replaced but twins raised as singles were not. Ewes and lambs re-weighed and condition scored when removed 18 Oct 2011.
- Stock were removed to allow annual legume to flower and set seed in its first year, soil was moist and feed was plentiful and only the Gland, resident Mt Barker Sub Clover and the first of the Balansa Clover had started to flower.
- Compared to other sites in previous years 3 kg/ha of Gland has not resulted in anywhere as many plants/m<sup>2</sup>. Very little grass evident, perhaps a higher cocksfoot rate could have been used, Sub Clover did not cover the ground until mid spring so weeds are present; 2 kg/ha of Plantain is plenty in hill country.

# Warwick's Comments

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- Leaving the whole economic analysis of development to one side for now. I thought this has to be as good a time or site to do a herbage analysis.
- Samples were taken of what was on offer. Leaf was picked as if sheep had taken a non selective bite, taking approx. top 5 cm from 10 cm sward height.
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- The 'control' estimated to be about 90% 'native' grass and 10% clover;
- The 'improved' sample perhaps 50% Plantain and 25% clover with 25% Grass.
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- A Lucerne paddock sample (top half of stem) taken at same time for comparison.(see table on page 3)

## Duck Gulley Control



Mainly Sub Clover and Striated Clover, and  
the dreaded weed grasses

Duck Gulley  
Sept 20



Duck Gulley  
Sept 2011



	Duck Gulley Control	Duck Gulley Improved	+ / -
HA. Ewe Tally	3.6ha	4.1ha	
Ewe tally, (twin)	22 Ewes	30 Ewes	
Set Stocking rate	6.1 ewes/ha	7.3 ewes/ha	+1.2 ewes/ha
Ewe liveweight in 15/08/11	74kg/hd, 452kg/ha	72kg/hd, 525kg/ha	-2kg/hd    +73 kg/ha
Ewe Liveweight out 18/10/11	68kg/hd; 415kg/ha	76.3kg/hd; 550kg/ha	+8kg/ewe;    +135/ha
Average Condition score 18/10/11	2.7	3.8	+1.1 C.S.
Lamb Liveweight average 18/10/11	21.0 kg	24.7 kg	
Lamb LW range	18-26.5 kg	18-34 kg	
Lamb Liveweight gain assuming 3.4kg birth weight, avg birth date 28/08/11	288 g/hd/day	347 g/hd/day	+59 g/hd/day
Lamb # ; %	41 ; 186%	55 ; 183%	
Lamb kg/ha at 18/10/11	210 kg/ha	330 kg/ha	121
LW/ha 18/10/11	625	881	+256
LW/ha production			+183kg/ha

# Warwicks Comments

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- Clover establishment average given sowing rate of legume.
  - relatively disappointed with clover plant population, was heartened by how well they seeded.
- Stocking rate on improved area proved too low (but had to allow legume to set seed)
- 10-12 su/ha was in order, and has been achieved on plantain based swards on other areas of farm.

# Warwicks Comments

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- De-Stocking occurred early before weaning to ensure re-seeding.
- Plantain re-seeded strongly (sowing rate plenty high enough)!
- Scotch thistles loved the extra fixed N! ..hope there is still some N left for next year !

# Warwicks Comments

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## ○ Repeat measurements YEAR 2:

- Look at plant populations following re-seeding
- See if animal production advantage is repeated (advantage is - can leave stock on longer this year as don't have to close for reseeding this spring, so can continue to graze until plants stop growing or weaning which ever comes first)

## ○ Lamb Growth Rates

- Average birth date, and Birth weight had to estimated.
- 288 g/day is in line with typical lamb growth rates on grass clover pastures.

# Duck Gulley May 2012, Ewe mating

